Claims:

1. Pharmaceutically or cosmetically active agents, obtained by the conversion of biomasses consisting of lipid-containing marine organisms into micro- and nanoparticles.

2. Agents according to claim 1, characterised in that they have a mean diameter of 10 nm - 10 µm.

3. Agents according to claim 1 or 2, characterised in that they additionally contain one or more pharmaceutical or cosmetic active substances.

4. Agents according to one of the claims 1 to 3, characterised in that they additionally contain one or more mineral substances and/or radical scavengers and/or dietary supplements and/or vitamins, in particular vitamin C.

5. Agents according to one of the claims 1 to 4, characterised in that they additionally contain one or more clay minerals (phyllosilicates), in particular bentonite with a diameter < 2 µm.

6. Agents according to claim 3, characterised in that they contain

   a) Xanthones or their derivatives and/or
   b) Ubiquinones with a chain length of n = 1 to n= 15 and/or
   c) Inorganic thiocyanates and/or
   d) Hydrothiocyanates of organic bases and/or
   e) Trihydroxybenzaldehyde or its derivatives and/or
   f) DNA

   as active substances.

7. Agent according to claims 1 to 4, characterised in that they contain norlichexanthone.

8. Agents according to one of the claims 1 to 7, characterised in that they additionally contain one or more dispersion-stabilizing substances.

9. Agents according to one of the claims 1 to 8, characterised in that as lipid-containing marine organisms

a) Cyanobacteria from the class Oscillatoriales, in particular the strains SPH 03, SPH 04, SPH 05, SPH 06, SPH 09, SPH 10, SPH 11, SPH 12, SPH 13, SPH 14, SPH 20, SPH 21, SPH 22, SPH 23, SPH 25, SPH 26, SPH 29, SPH 32, SPH 34, SPH 37 and/or

b) the class Nostocales, in particular the strains SPH 18, SPH 20, SPH 27, SPH 28, SPH 38 and/or

c) the class Chroococcales, in particular the strains SPH 07a, SPH 07b, SPH 08, SPH 14, SPH 16, SPH 17, SPH 24, SPH 33, SPH 36, SPH 39, SPH 40, SPH 43 and/or

d) the class Stigonematales and/or

e) Macroalgae from the genera Asparagopsis, Cystoseira, Codium, Dictyota, Dictyopteris, Enteromorpha, Fucus, Gelidium, Gracilaria, Gracilariopsis, Halopteris, Hypoglossum, Laurencia, Plocamium, Polyneura, Sargassum, Solieria, Ulva and/or

f) Thraustochytrids from the genera Schizochytrium and Thraustochytrium and/or

g) Marine bacteria from the genera Photobacterium, Shewanella and Colwellia

are employed.

10. Agents according to one of the claims 1 to 9, characterised in that as lipid-containing marine organisms cultivated lipid-containing marine organisms, in particular lipid-containing marine organisms cultivated in the presence of clay minerals, are employed.

11. Method for the production of pharmaceutically or cosmetically active agents according to claims 1 to 10, characterised in that biomasses of lipid-containing marine organisms are converted by homogenisation or emulsification into micro- and nanoparticles with a diameter of 10 nm - 10 µm.

12. Method according to claim 11, characterised by the following steps:

- Heating the marine microorganisms until the liquefaction of the fatty acids contained therein
- Optionally adding one or more active substances or additives
- Mixing the biomass or the charged biomass with a surfactant-water mixture heated to a temperature above the fatty acids' melting points and unification of the two phases

- Preparation of a pre-suspension
- High pressure homogenisation in one or more homogenisation cycles

13. Method according to claim 12, characterised in that the heating of the microorganisms and of the surfactant-water mixture is omitted and that the active substances are adsorbed at room temperature at the lipid-containing marine microorganisms or are dispersed under the addition of a little quantity of water.

14. Method according to claim 11, characterised by the following steps:

- Suspending the marine microorganisms and optionally the additives in an organic solvent and pre-dispersing this mixture
- High pressure homogenisation and subsequent spray drying or lyophilization
- Redispersion in an aqueous surfactant solution
- Again dispersion and high pressure homogenisation in one or more homogenisation cycles

15. Method according to claim 11, characterised by the following steps:

- Formation of an emulsion of water and biomass and optionally with the additives
- Dissolving the emulsion in an appropriate organic solvent
- Adding a water-soluble co-surfactant and pre-dispersing
- High pressure homogenisation and removal of the solvent

16. Use of biomasses of lipid-containing marine organisms as a carrier for active substances.

17. Use of the biomasses of lipid-containing marine organisms in the form of micro- and nanoparticles according to claims 1 to 10 as pharmaceutically or cosmetically active agents.

18. Use of biomasses of lipid-containing marine organisms in the form of micro- and nanoparticles according to claims 1 to 10 as foodstuff additives.

19. Use of biomasses of lipid-containing marine organisms in the form of micro- and nanoparticles according to claims 1 to 10 for the production of cosmetics or pharmaceuticals or foodstuffs.

20. Use according to claims 17 to 19 in combination with other cosmetics or pharmaceuticals.

21. Use according to claims 17 to 19 for gene transfer.

22. Use of biomasses of lipid-containing marine organisms in the form of micro- and nanoparticles according to at least one of the claims 1 to 10 for preventing the binding of nosocomially important air-spread germs to receptors on the skin or tissues and/or their growth on the skin or tissues.

23. Use according to claim 22 for the improvement of the natural barrier function of the skin and/or for modifying the skin milieu.

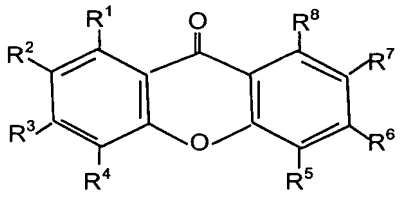
24. Use of biomasses of lipid-containing marine organisms in the form of micro- and nanoparticles according to at least one of the claims 1 to 10 for the prophylaxis of nosocomial infections.

25. Use according to claims 22 to 24 for inhibiting multiresistant *Staphylococcus aureus* strains, in particular methicilline-resistant strains of *S. aureus* (MRSA).

26. Use according to claims 22 to 24 for cleaning up skin being contaminated with MRSA.

27. Use according to claims 22 to 24 for the skin care after the decolonization by means of bactericidal agents.

28. Use according to claims 22 to 25 in combination with xanthone derivatives of the formula



wherein R1-R8 can be selected from the substituents listed in table 1.

29. Use according to claims 22 to 25 in combination with vitamins, in particular with vitamin C.

30. Use according to claims 16 to 19 as a carrier for antibiotics.

31. Use according to claims 17 to 19 for the dosed release of antimicrobial active substances and for simultaneous immunostimulation.

32. Use according to claims 17 to 19 in slow-release systems for the prevention of implant-associated infections.

33. Use according to claims 17 to 19 for the stimulation of leucocytes or for the activation of the reticuloendothelial system.

34. Use according to claims 17 to 19 for the impregnation of textile materials and/or materials produced on a cellulose basis or as covering materials for wound treatment.

35. Use according to claims 17 to 19 in the form of oils, sprays and ointments.

36. Use according to claims 17 to 19 for the acceleration of cell growth.

37. Use according to claims 17 to 19 for the goal-directed substitution of deficiency syndromes.